

Fig. 1

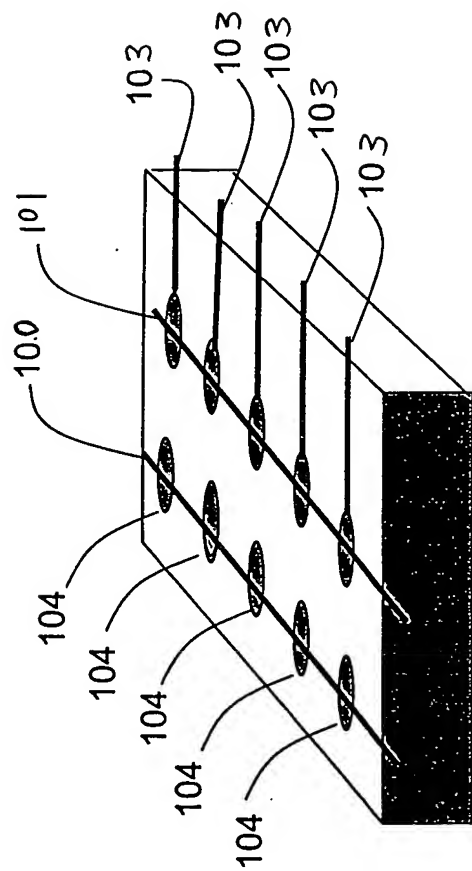
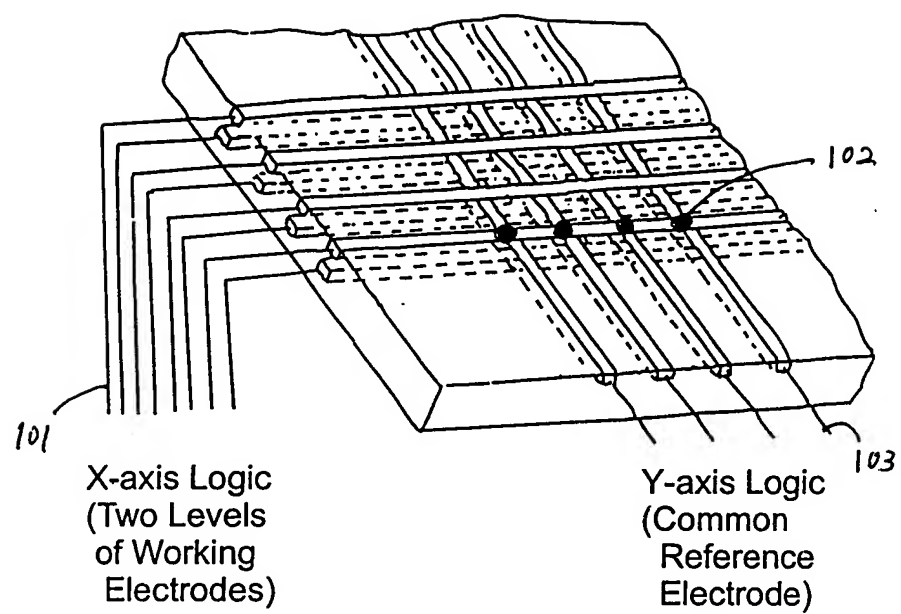
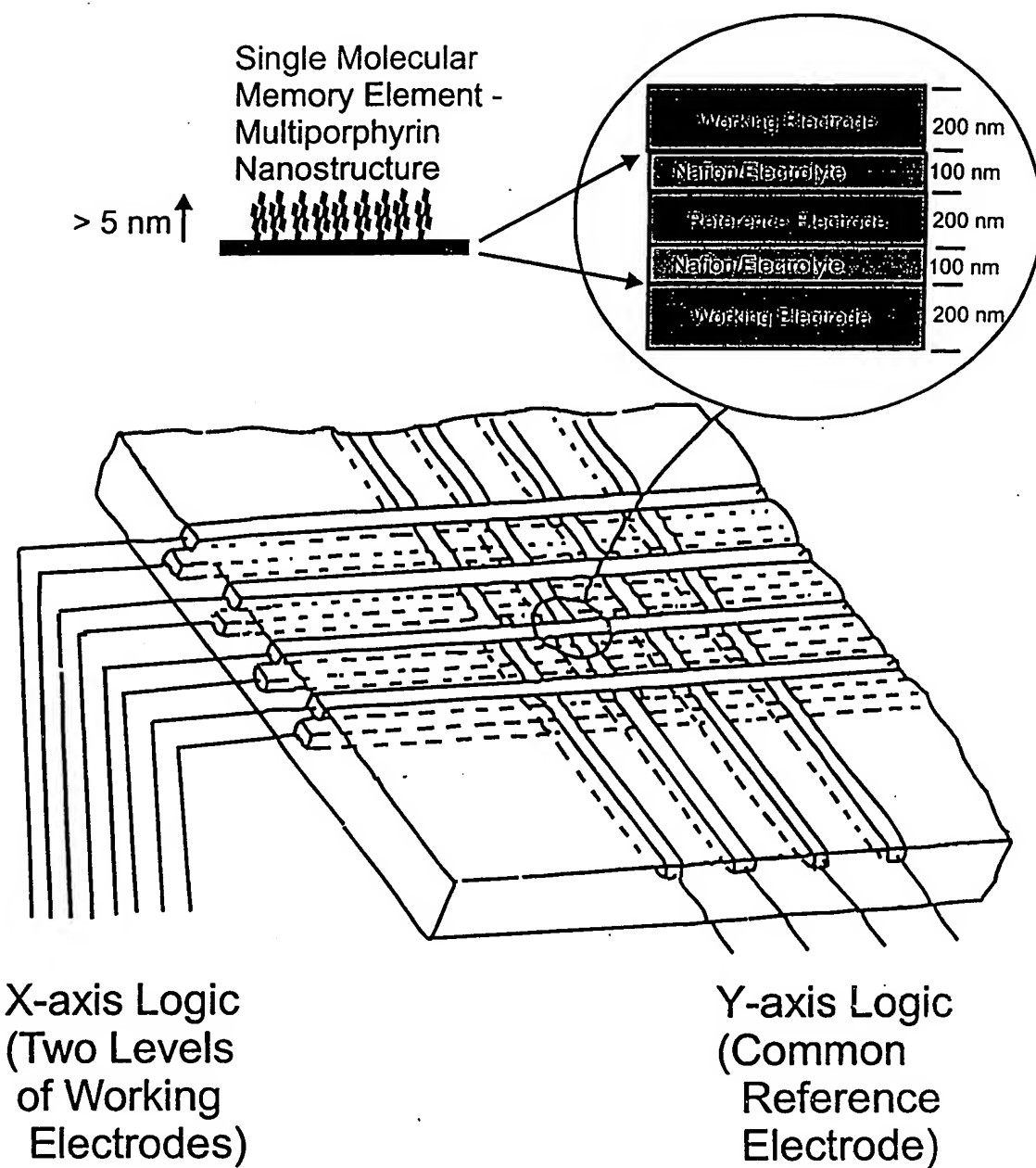


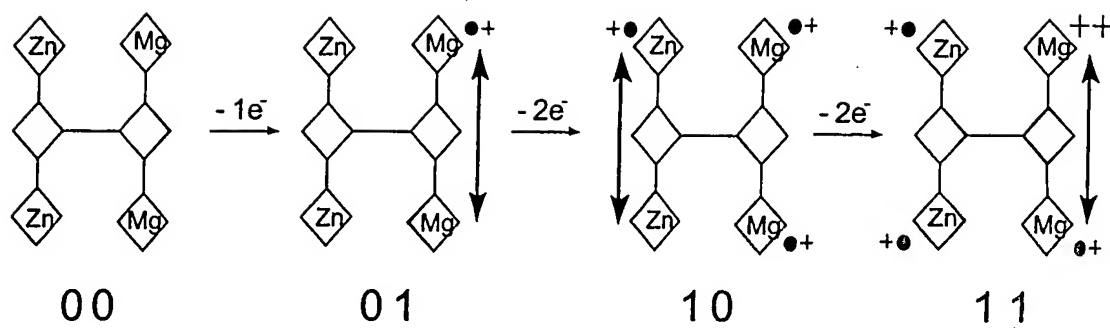
Fig. 2



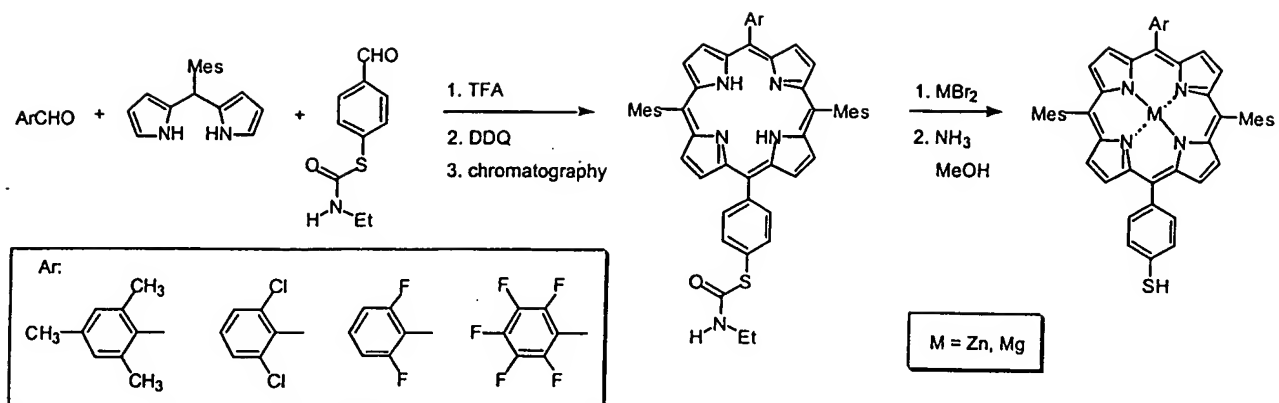
**Fig. 3**



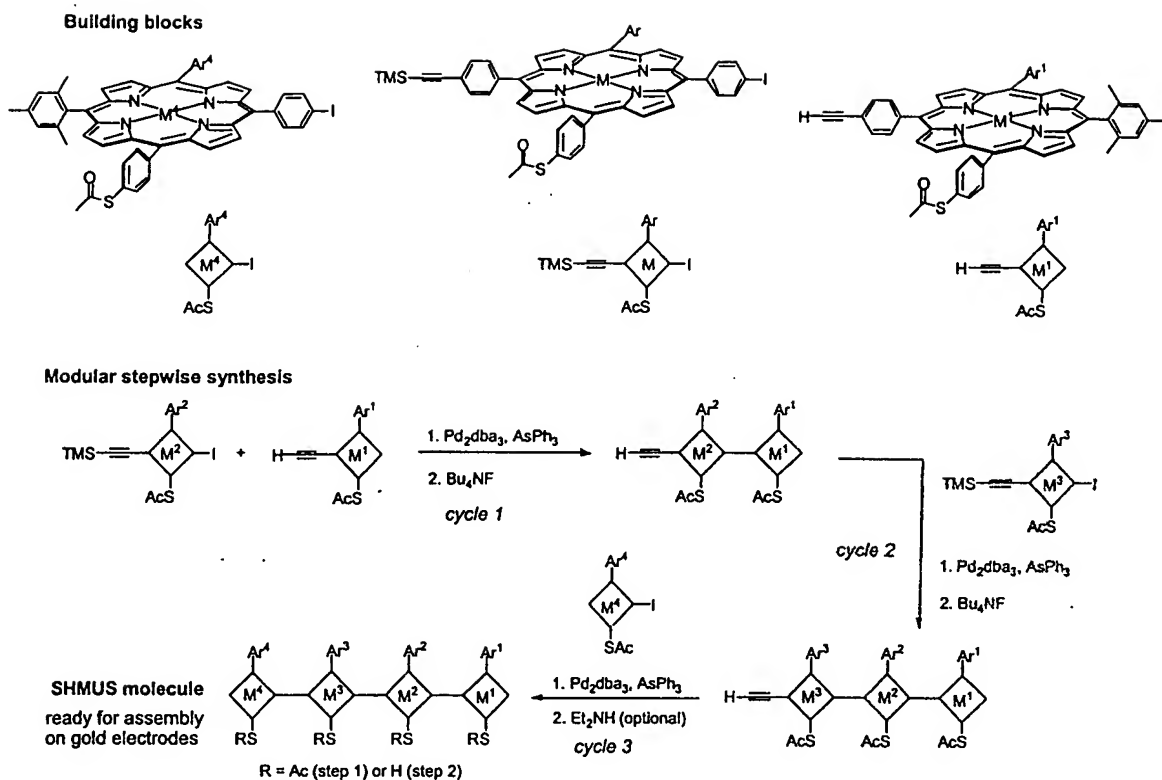
**Fig. 4**



**Fig. 5**

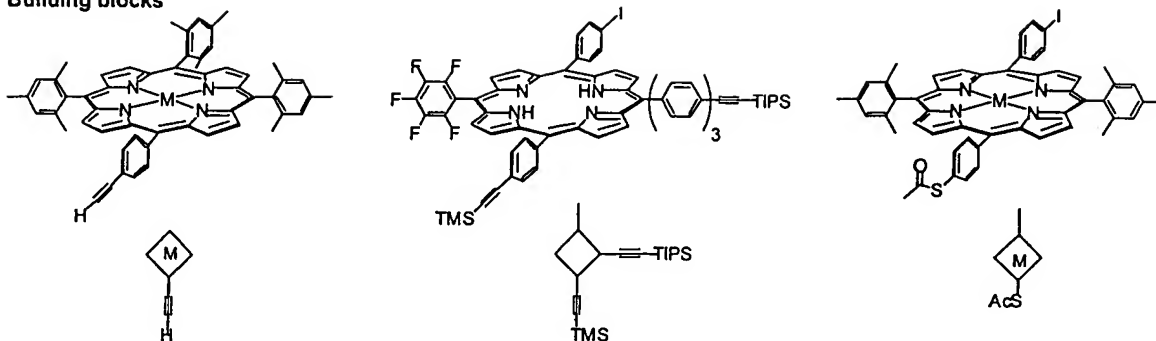


**Fig. 6**

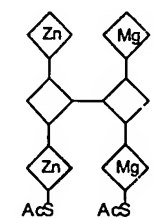
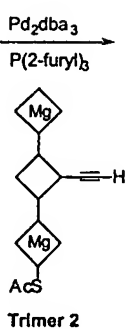
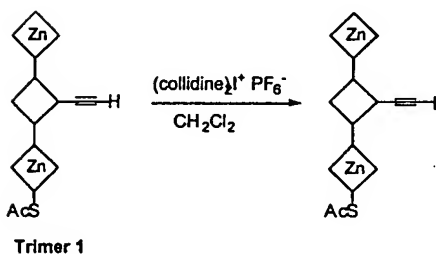
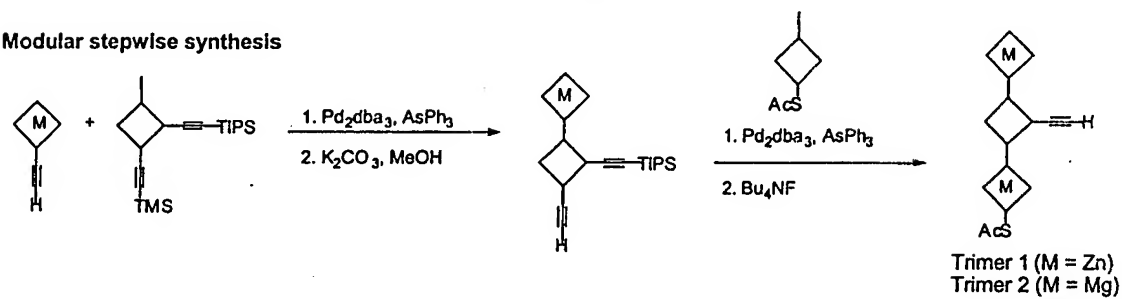


**Fig. 7**

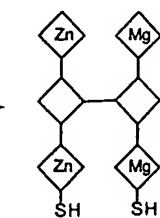
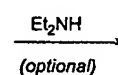
### Building blocks



### Modular stepwise synthesis



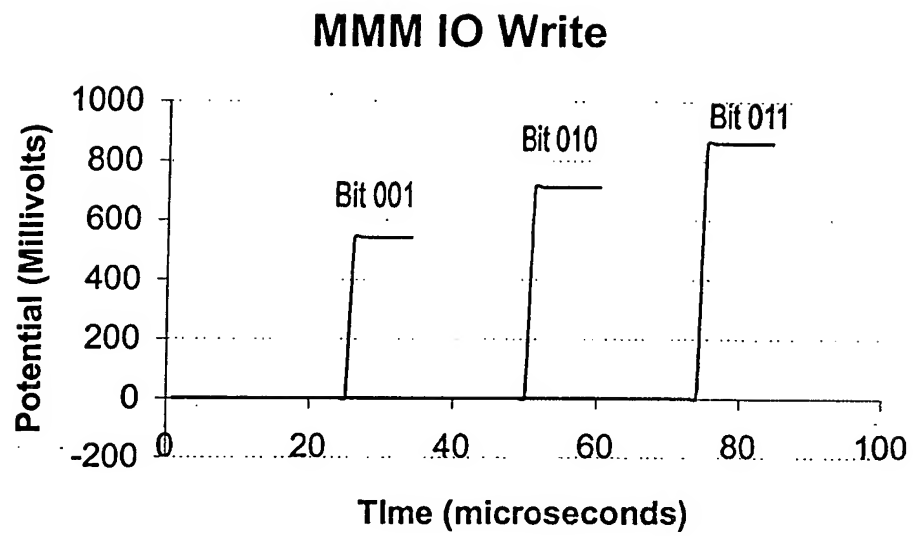
**DHMUS molecule**  
ready for in-situ  
cleavage and assembly  
on gold electrodes



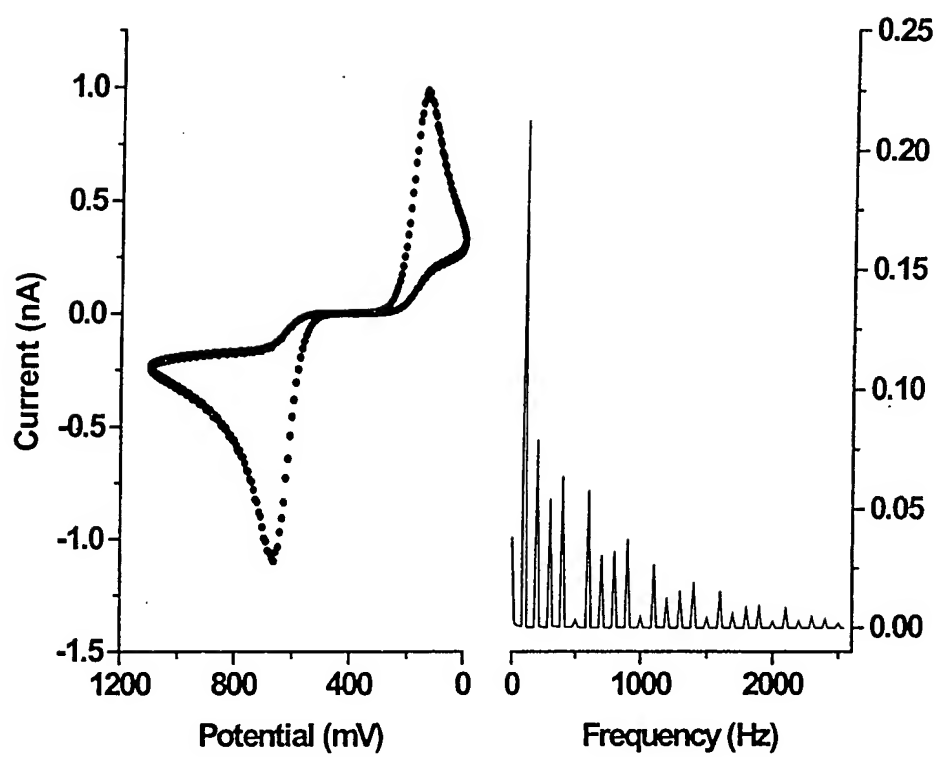
**DHMUS molecule**  
ready for assembly  
on gold electrodes

**Fig. 8**

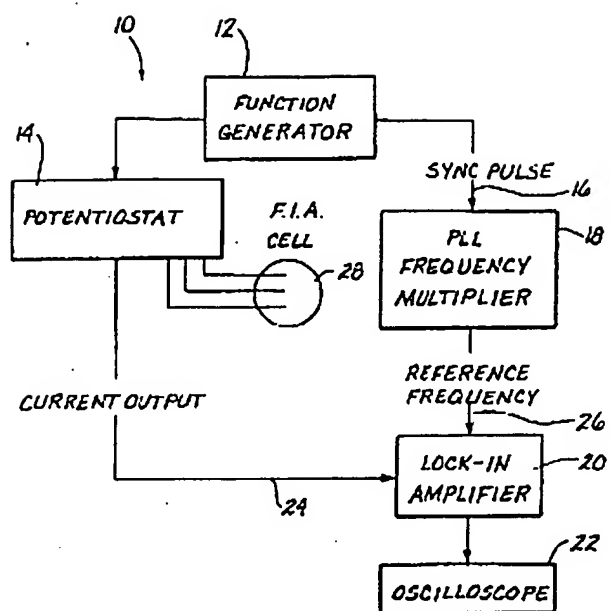




**Fig. 9**



**Fig. 10**



**Fig. 11**

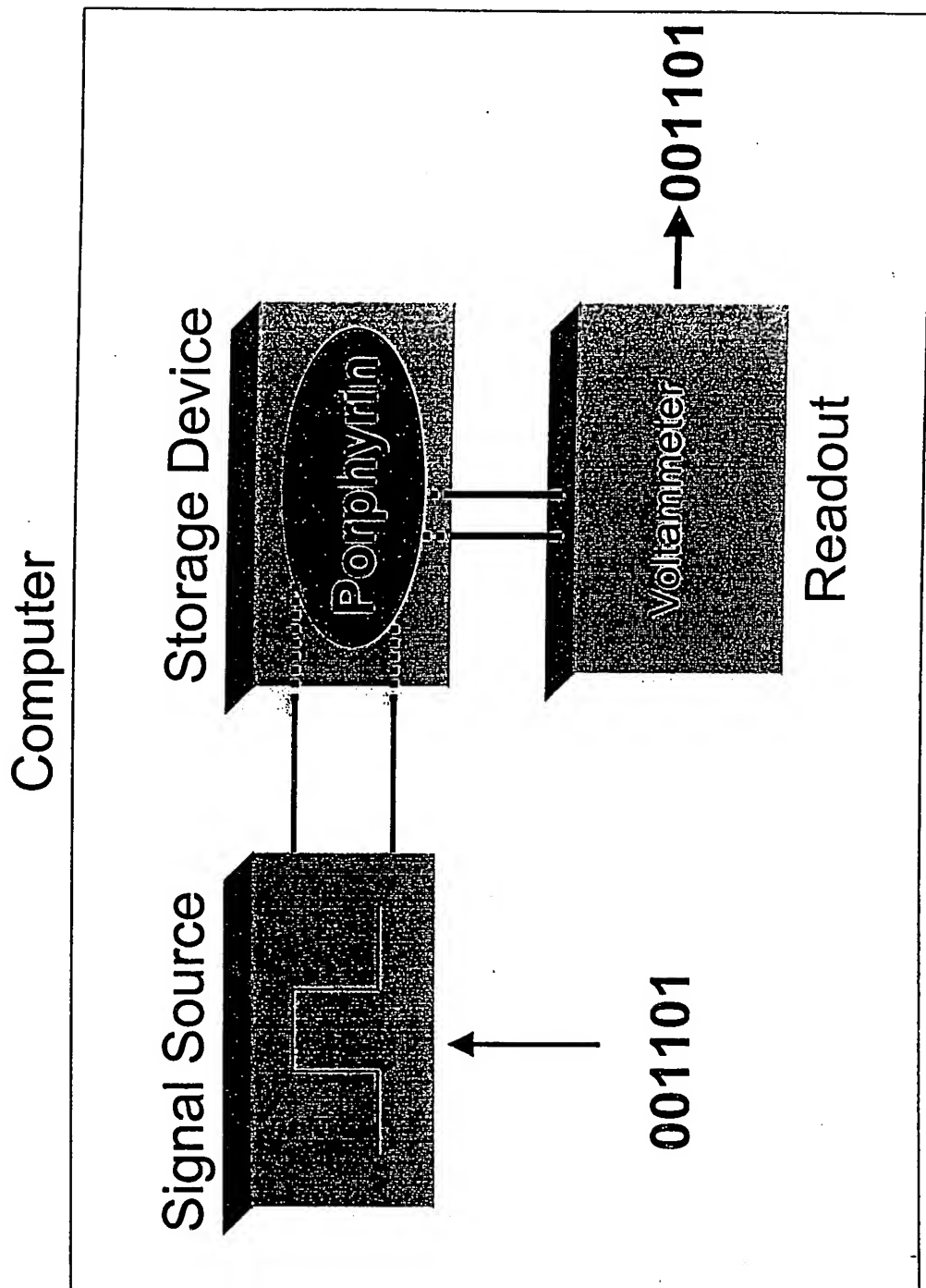
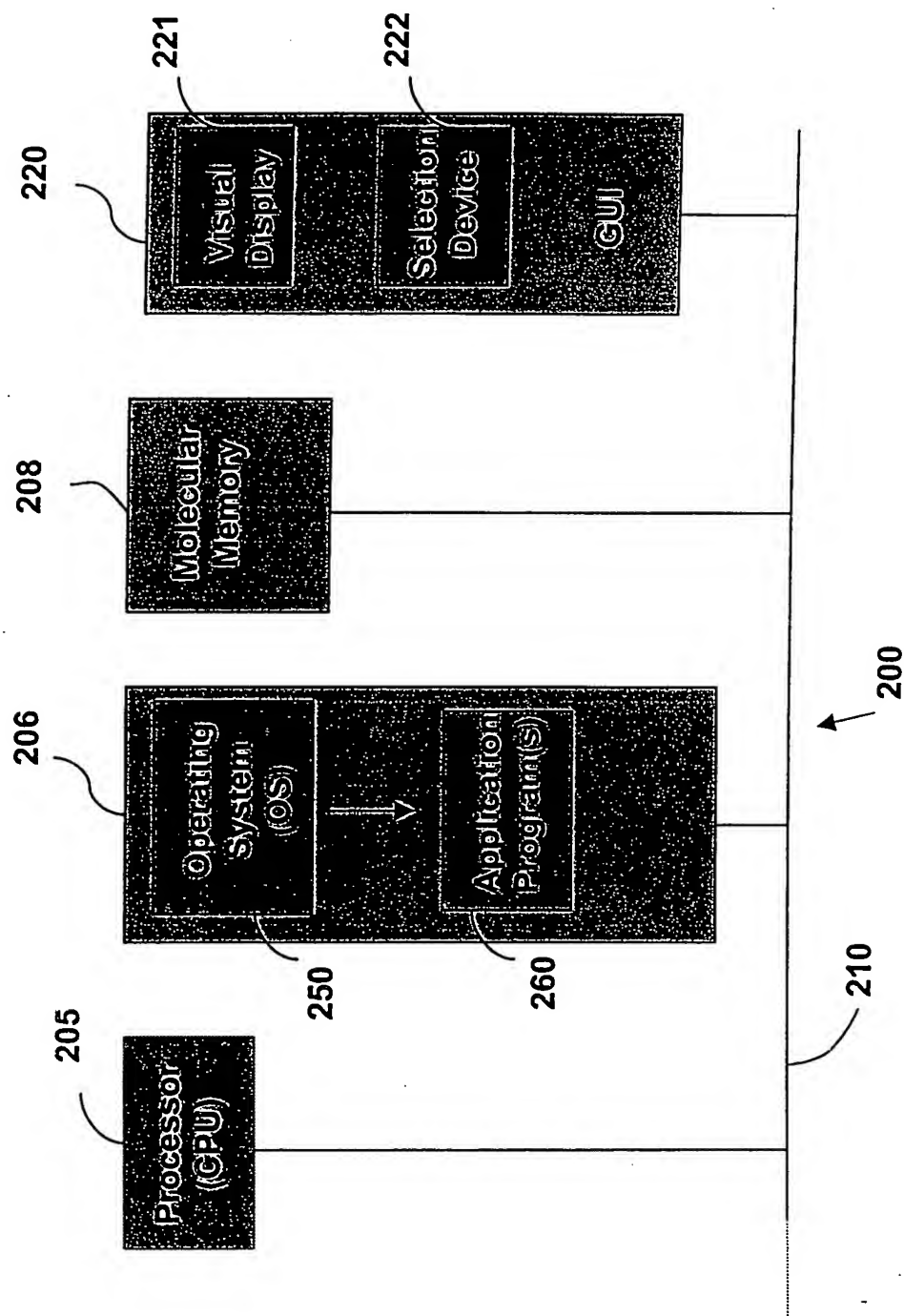


Fig. 12



**Fig. 13**

Scheme 1.

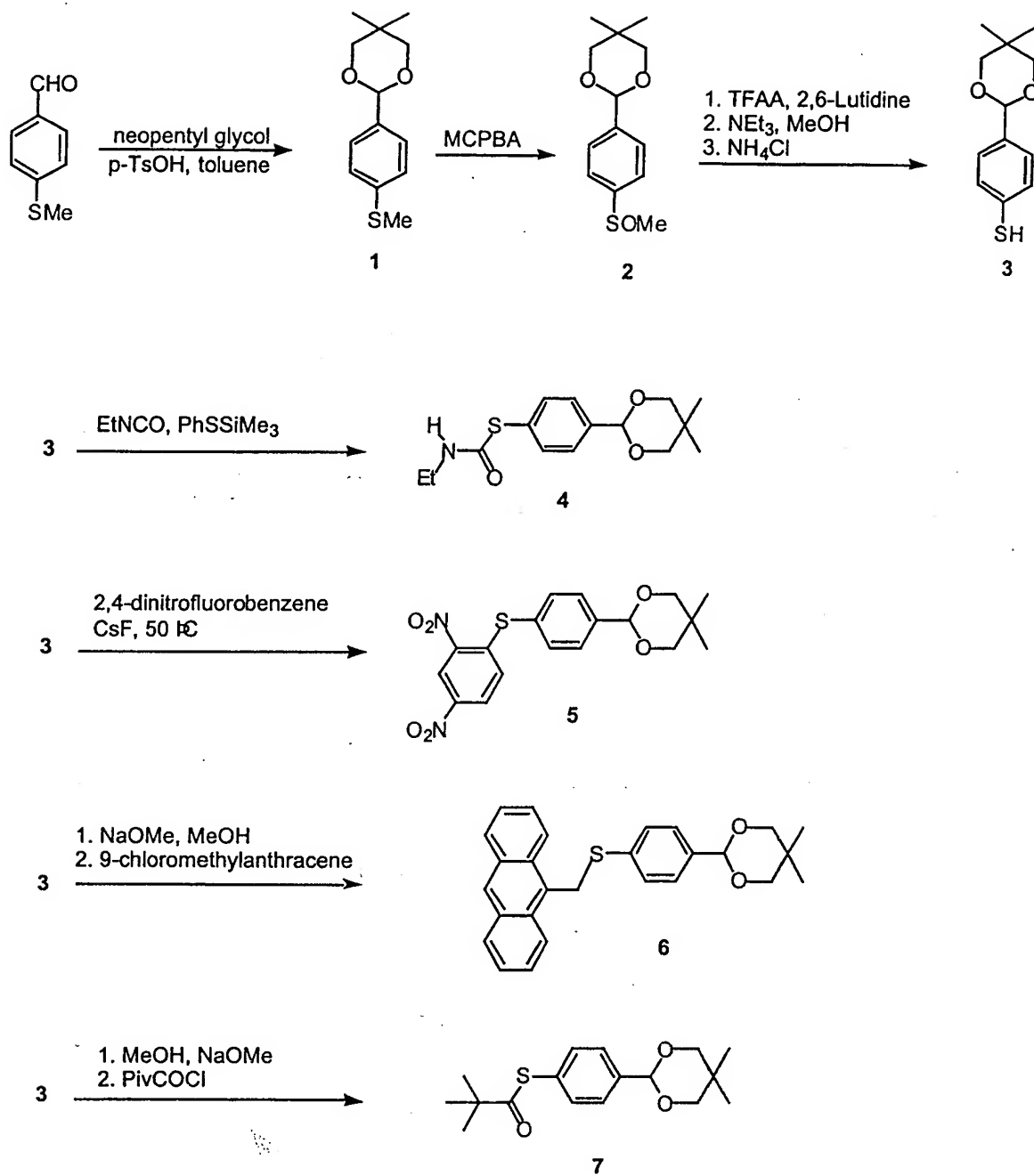
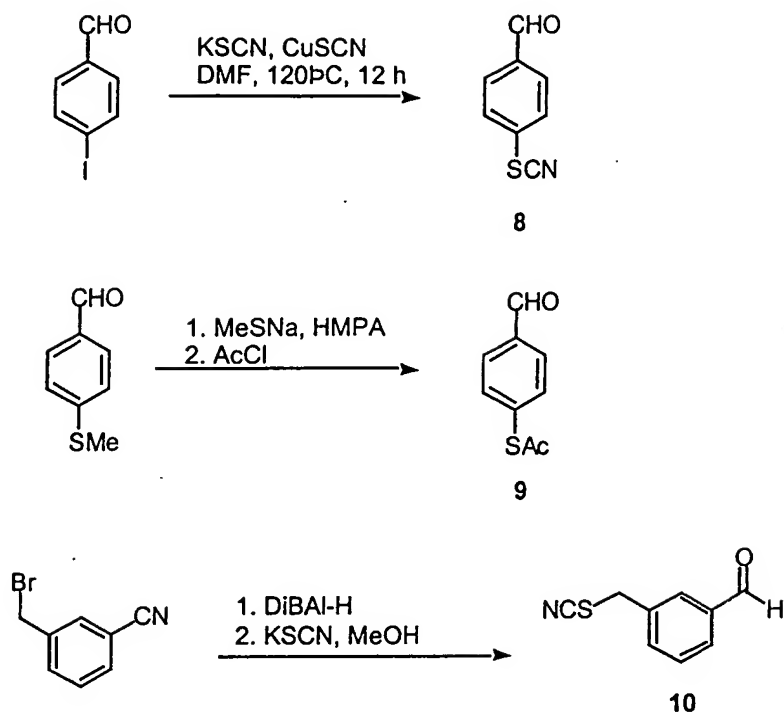


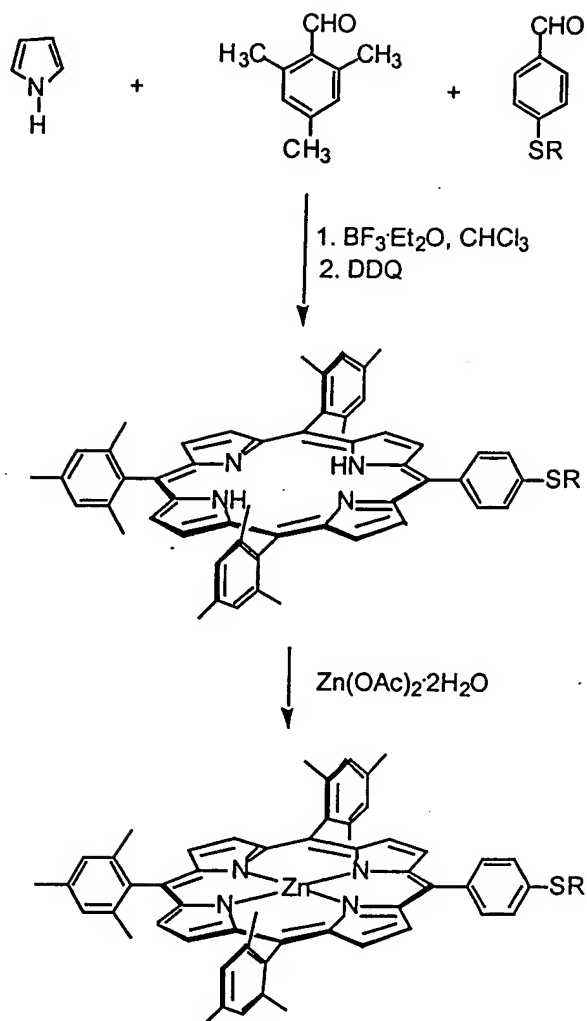
Fig. 14

**Scheme 2.**



**Fig. 15**

**Scheme 3.**



11. R = CONHEt  
12. R = 2,4-dinitrophenyl  
13. R = 9-anthrylmethyl  
14. R = Piv  
    R = Me  
9. R = Ac

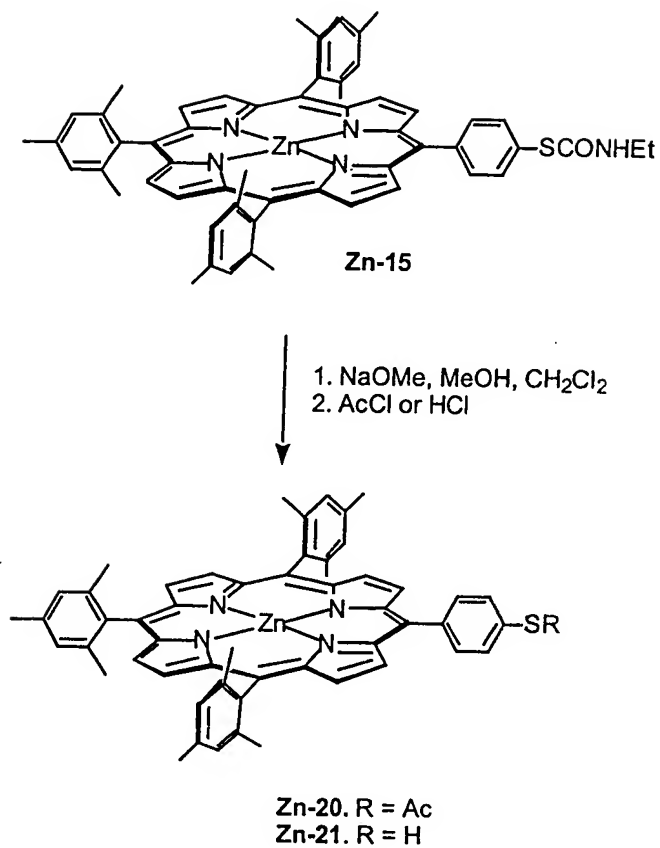
15. R = CONHEt  
16. R = 2,4-dinitrophenyl  
17. R = 9-anthrylmethyl  
18. R = Piv  
19. R = Me  
20. R = Ac

Zn-15. R = CONHEt  
Zn-16. R = 2,4-dinitrophenyl  
Zn-17. R = 9-anthrylmethyl  
Zn-18. R = Piv  
Zn-19. R = Me  
Zn-20. R = Ac

**Fig. 16**

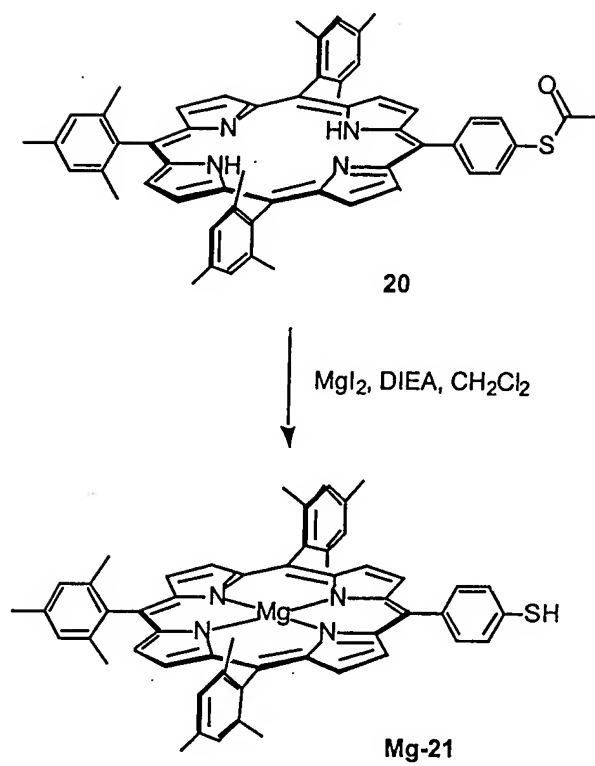


Scheme 4.



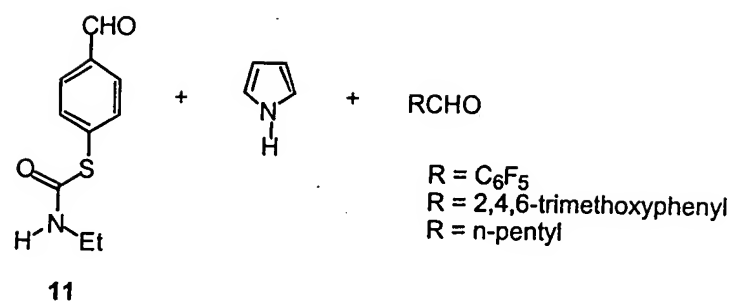
**Fig. 17**

Scheme 5.

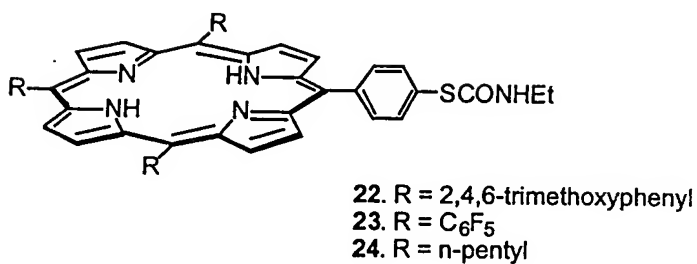


**Fig. 18**

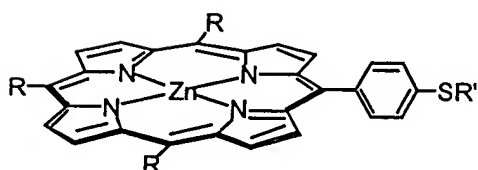
Scheme 6.



1.  $\text{BF}_3 \cdot \text{Et}_2\text{O}$   
2. DDQ



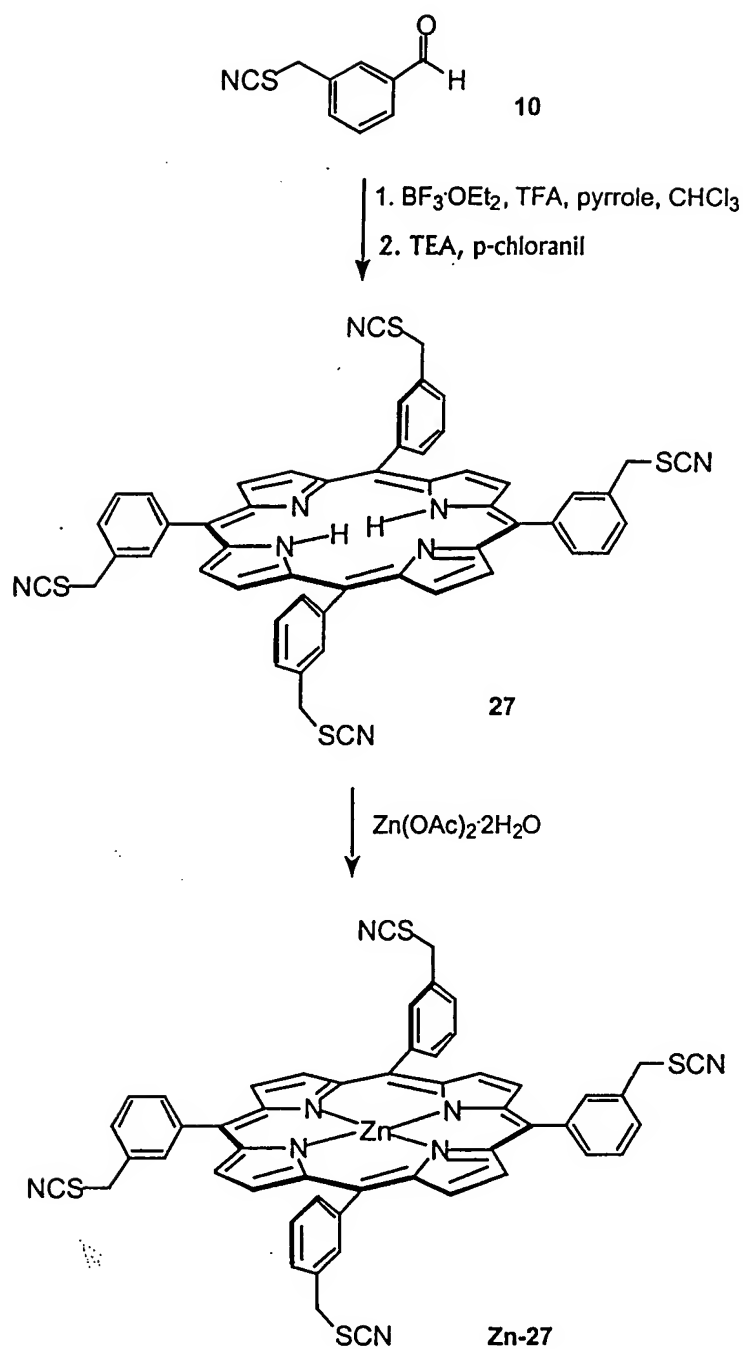
$\text{Zn}(\text{OAc})_2 \cdot 2\text{H}_2\text{O}$



|        |  |                             |
|--------|--|-----------------------------|
| Zn-22. | $\text{R} = 2,4,6\text{-trimethoxyphenyl}$ | $\text{R}' = \text{CONHEt}$ |
| Zn-25. | $\text{R} = \text{C}_6\text{F}_5$          | $\text{R}' = \text{H}$      |
| Zn-26. | $\text{R} = \text{n-pentyl}$               | $\text{R}' = \text{H}$      |

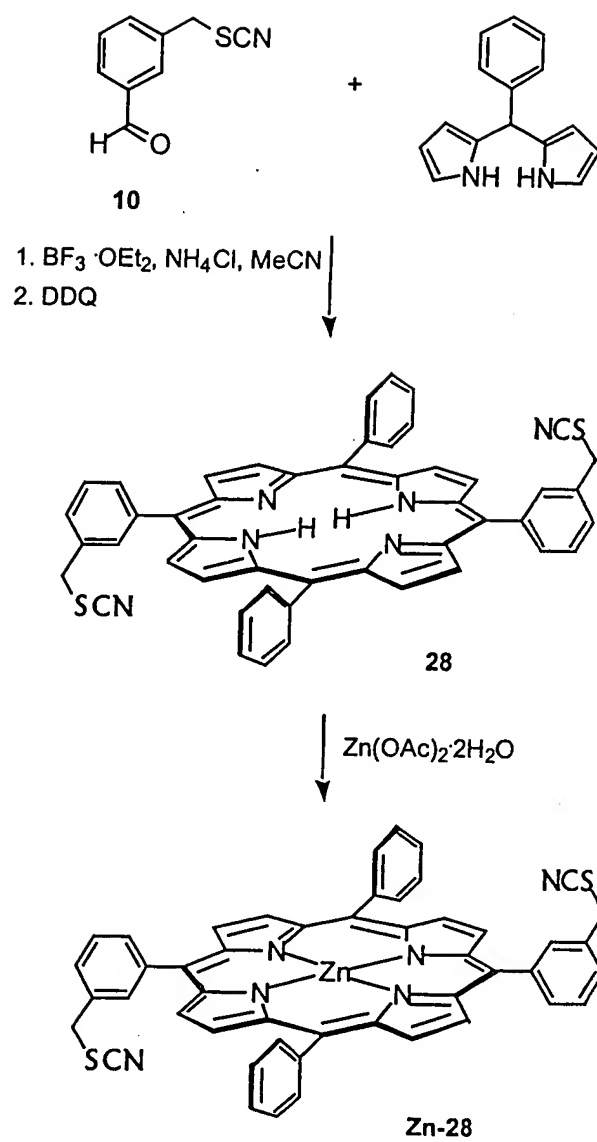
**Fig. 19**

Scheme 7.



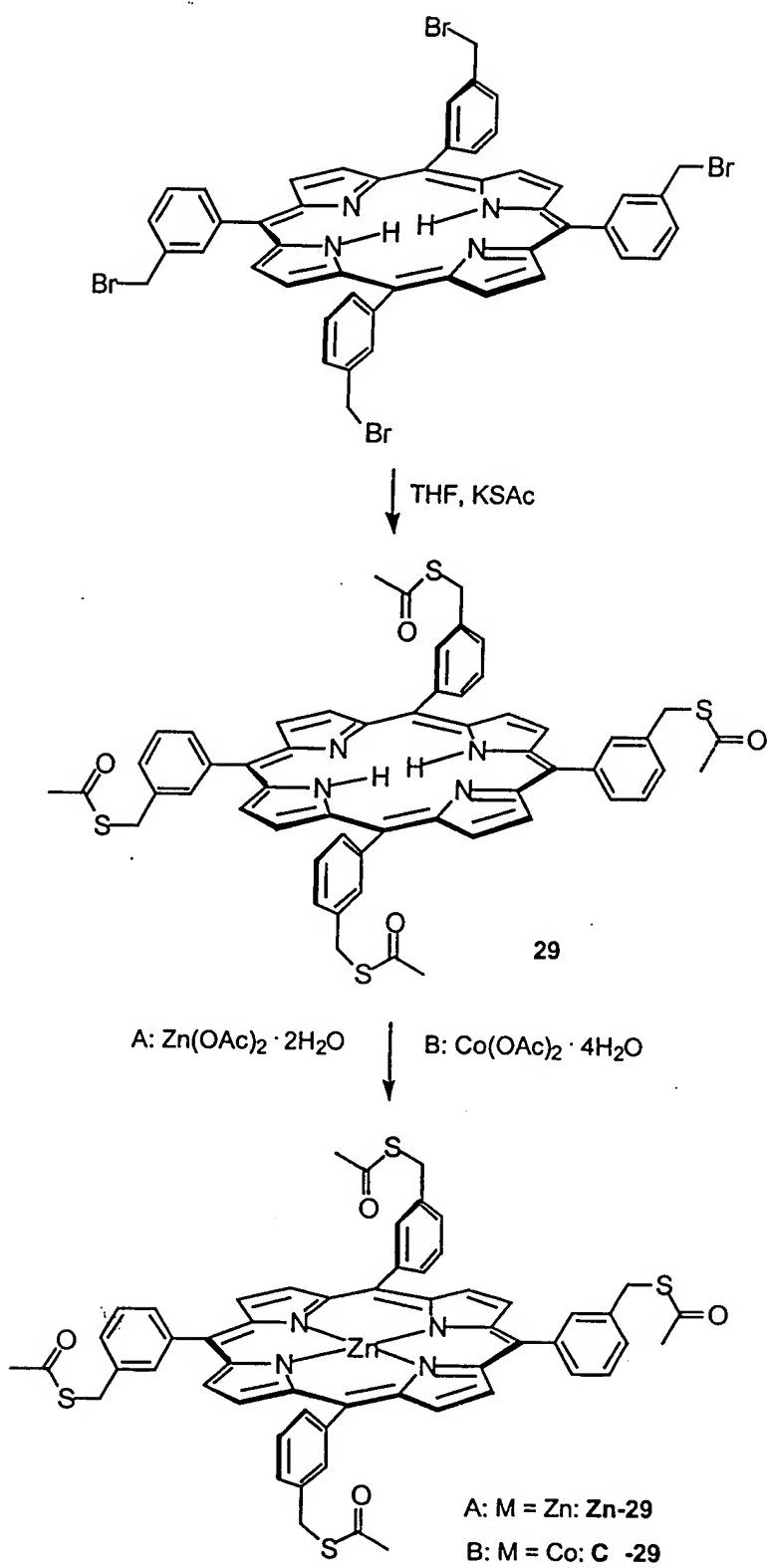
**Fig. 20**

Scheme 8.

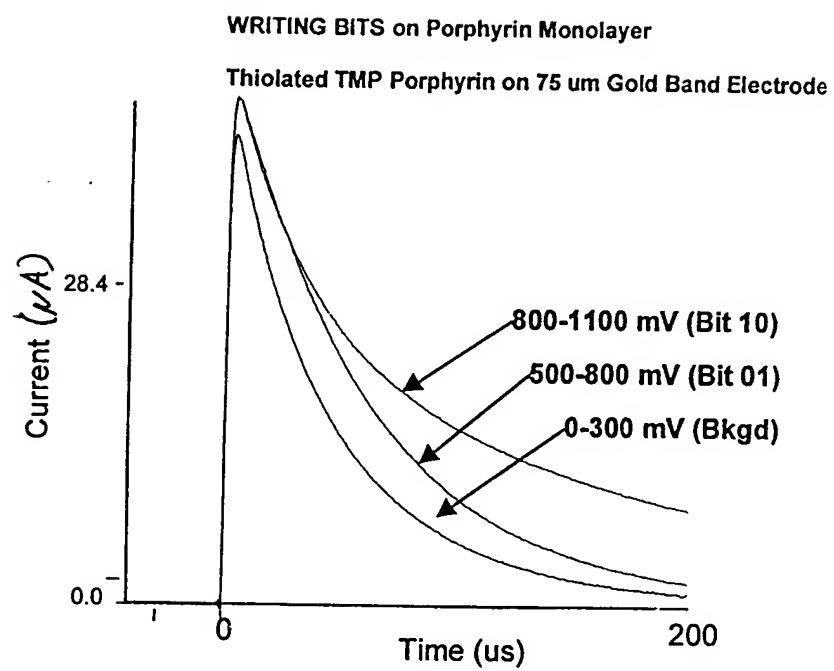


**Fig. 21**

Scheme 9.



**Fig. 22**



**Fig. 23**

# Background-Subtracted "READ" Current

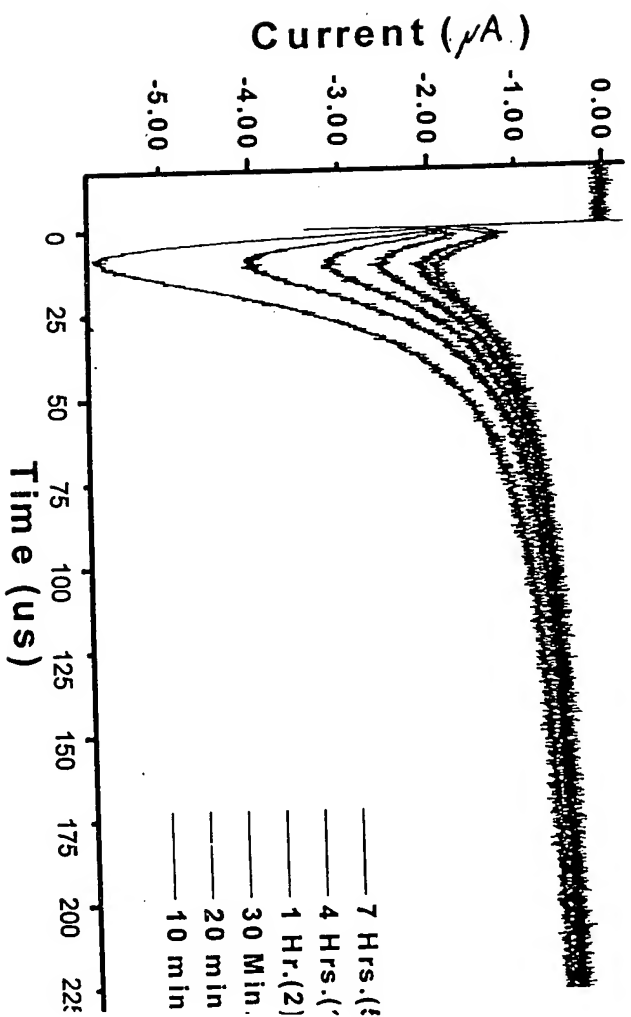
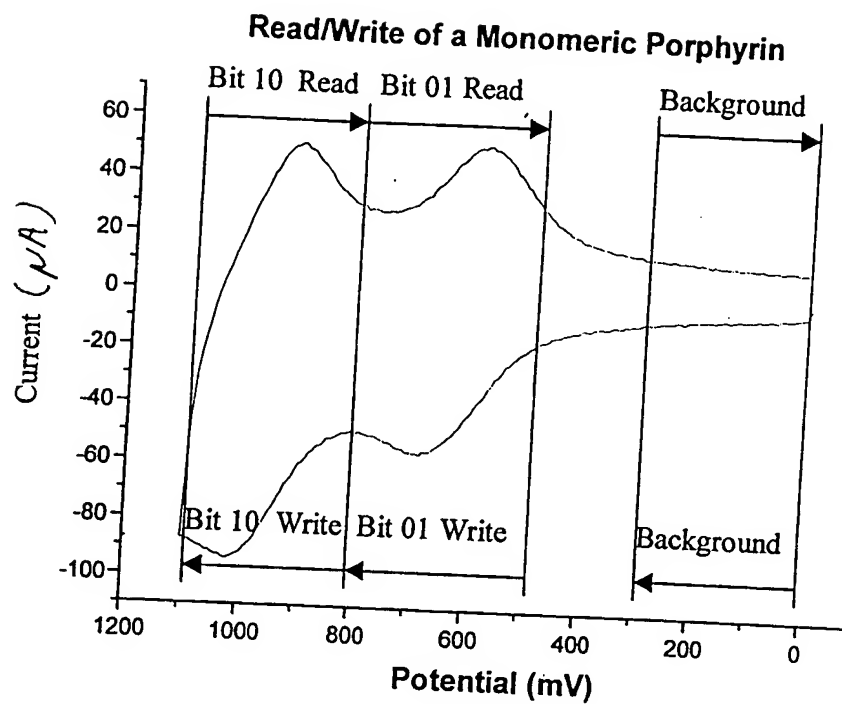


Fig. 24





**Fig. 25**